INNOVATIVE USES OF AIRCRAFT FOR FLIGHT TRAINING

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MR. BAETGE: Thank you, John. Good morning. The theme of our presentation is the development of ideas and ways in which to increase effectiveness of the aircraft as a training device with particular attention to the application of LOFT concepts to the aircraft in its home environment. Rather an intriguing subject, we found.

We were fortunate in our group to have representation from the aircraft manufacturers and a simulator manufacturer as well as operators and companies who operate with single-pilot operations and operators using four-engine jet aircraft. Our exchange of ideas was enlightening and the input was quite diverse.

We began with a given. The given was that there was some required and necessary training, aircraft and the LOFT concept. Our objective was to find a solution or, if you will, devise a plan in which to integrate our three given variables into a workable, practical solution.

At this time I'd like to introduce our co-chairman, Mike Sele, who will present some of the ideas that precipitated from our discussion. Then we'll open it up for some questions at the end.

CAPT. SELE: Thank you, Mike and thank you, John.

I think the first order of business that we ought to cover this morning that has been brought to my attention by a local TV channel and a number of my committee that today happens to be the 25th anniversary of NASA, I understand, so congratulations to NASA for inviting all of us here to use their facilities and for all the expertise and help that we have gotten from your people, the kind hospitality, and thank you very much.

Yes, we do have a diverse group in this working group, and we have an number of people from the single-pilot operation. We had the manufacturers from the Boeing Airplane Company and from British Aerospace. We has some people from the CAE. Our group was of a size that we decided to stay in one group rather than to split up into two or three different smaller groups.

One of the first comments out of the bag over there, I think, was that indeed what we're looking at doing is going to set aviation back 20 years. By that I mean that 20 years ago or more the people at United, TWA, American, all of the major carriers were going into the simulation business and getting out of the airplane for training. And here we are in 1983 with a working group trying to make a decision about going back, indeed, not using simulators, but using aircraft in flight training and LOFT training. We've all been doing it in flight training for some time, so that's nothing new to us. We use it for initial, we use it for recurrent, we use it for upgrade, all of the rest of them.

One of the first objectives for our committee that we have to identify is the reason for using the LOFT training in this circumstance to minimize the total aircraft flight time for training. Obviously if we can minimize the training, there is going to be an economic benefit to all of our companies.

We were to look into the use of aircraft rather than a simulator, and we were also trying to look into the use of the LOFT principles with an aircraft environment situation.

Those objectives gave us a lot of areas to work in. One of the things that we first looked at, however, was does a need exist for this particular type of training? Yes, definitely there is. One of the problems -- or an area that we saw there was that financial expenditures are considerable for training, and we're just adding more and more to it as we go along, and perhaps with the proper use of the LOFT training, we can reduce some of those.

We feel as a committee that the aircraft can be used either as a static or a dynamic training device with some problems associated with both. The Triad concept this morning I had not heard of either. That's an interesting idea.

A number of the carriers involved yesterday made some comments that during their initial operating experience they required a trainee to ride in the jumpseat. One of the comments was made that perhaps when this individual goes to City X, Y, or Z, he'll even know where operations is, he'll know where the gate is, he'll know the layout of the airport. Some of those things are required under a 121 operation. As many of you know, however, under a 135 operation, it's not always a requirement, and it can save some time.

One of the things that we do at Air Wisconsin in our training program that does employ some of the principles of the LOFT training, we normally try to use two pilots at the

same level. If we have two captains, for example, that are upgrading into the 146, we put one in the left seat, we put one in the jumpseat, and we put an instructor in the right seat. The gentleman riding in the jumpseat thereby gets to observe all the mistakes that his buddy makes and sit back there and say "hey, dummy, you forgot this and you forgot that" in his own observations. And then you reverse the role and put him up there, and other guy sits back there and says, "hey, you dummy, you forgot this, you forgot that." They both learn a lot from that. So I think that can be of great benefit.

One of the problems or concerns that we found from our committee, is the availability of the aircraft. Here again, we are competing with the revenue schedule and with maintenance for the aircraft. Another concern or problem that we see, and probably should have been identified as the number one issue is safety. Safety, again, in this type of training, you're getting more exposure, you're doing a lot of different things. Any time you get that airplane in the training environment, the potential for an accident or an incident is certainly there. You're also looking at the human and the aircraft limitations during this type of training. You have to be aware of those particular problems.

In line with the availability of the airplane, we find that we're all doing our training at night after the airplane ends revenue service and prior to entering revenue service in the morning. So we're doing our training between the hours of 10:00 p.m. and 4:00, 5:00, 6:00 a.m. in the morning, with the exception of our committee member who was in the air freight business -- they fly all night long, and then they use the airplane during the day for training.

Another area we were concerned about was that in order to utilize an aircraft as a dynamic training device, it requires a great deal of advanced planning and a thorough workout of a scenario. It takes a great deal of time to set this up to get it into something that will work, where the LOFT concepts fit into the flight training.

Another problem that we saw and that concerns us -- it happens every time you go up to do a check ride, it happens every time you go up to do any kind of flight training, and that it's very difficult to control the environment in which you're working. The ATC environment, the weather environment, all of these things make it difficult at times.

Some of the advantages, the pluses that I had mentioned earlier in my opening remarks on the first day, one, we're all aircraft operators, so obviously we all have airplanes, so you don't have to go out and buy another airplane

necessarily to do this training. So the capital outlay there is not very great. It is, however, for the cost of the aircraft operation during the training.

Another item that we find by use of the aircraft is that we definitely have a realistic situation. What can be more realistic for training for flying than to be up there flying the airplane. You're going to encounter all of the things there. The pilot is going to have to continue to fly in the airplane and cope with and respond to the other elements that are introduced.

One of the things that was pointed out by one of the simulator manufacturers was that flight crews seem to accept flight training in an aircraft more readily than they do simulator training. The comment was made earlier that if he misses the same approach three or four times in a simulator, he turns around and says the damn simulator doesn't know how to fly. If you do it in the airplane, it's pretty hard to blame the aircraft in that particular instance. There's a psychological advantage, I think, to have the actual airplane in that particular instance.

There is another area that we found that was quite beneficial to a couple of our operators. They were in a situation where if they have an essential air service route or if they are into a circumstance where they may have an aircraft that is flying a segment with no revenue on board, they can combine that particular segment with flight training, with LOFT training, and a number of them do that. The air freight operation -- there are times where they're deadheading an airplane back without any freight on board or revenue on board, so they're able to conduct a limited amount of training during that segment of flight, and thereby reduce their overall training costs. As all operators do, we end up deadheading aircraft from Point A to Point B for some reason whether it be maintenance-related or positioning of an aircraft. Again, some of the operators took advantage of that particular situation, used deadheading flights or ferry flights for training purposes.

The alternatives to using aircraft have been explored quite extensively earlier. We, as a committee, felt that if the Regional Airline Association had some of these video tape presentations available, it would certainly benefit all of us, and we highly endorse the RAA establishing a library of these things. If we could get more of that, that would be a real plus for us.

A situation was explored earlier talking about a mobile simulator or a generic mobile simulator, if you will; again the manufacturer was in our committee. They do at this time make mobile simulators for the military operation and

application. Perhaps that's another area if they were available in Philadelphia, and Frank was mentioning that there are a number of operators within a hundred miles of the Philadelphia airport. Certainly a hundred mile radius would not be difficult to cover with a mobile van of some sort, thereby giving you access at your base to that simulator on a specific time frame.

Again, another alternative that we found was the use of CPT's or IFT's, the use of the static aircraft for those particular things. We feel that those can significantly reduce the training costs and the use of the aircraft.

The recommendation that we would make as a committee is that all training should be standardized and specific guidelines developed to increase the effectiveness of the LOFT concept utilizing an aircraft. If you're in the short-haul business, you may want to explore the possibility of making a long-haul training scenario. An example was given in our meeting of an operator coming from Jamestown, North Dakota to Minneapolis, Minnesota in a Merlin Metro. It's about an hour and 15 minutes. Their alternate for that particular day with the weather circumstances that we have in the upper Midwest was back up in Montana. It's an hour and 15 minutes down to Minneapolis, it's an hour and 15 backup to Jamestown, and it is two hours and some odd minutes over to their alternate. They just went into the long-haul business if they miss that approach to Minneapolis. So it's not saying that your scenario would run the entire gamut of that, but to prepare for that. It certainly lends some credence to flight planning, training in the use of forecasts and all of the other information there. Most of us get in the airplane and we're going to be at our destination in 28 minutes or 30 minutes, ten minutes in some cases. We just opened up a new segment with the 146. To give you an example of that, that is from Appleton, Wisconsin to Green Bay. It's 15 nautical miles. We're going to do that in a four-engine turbo jet. The gear is going to stay down, and the flaps are probably going to stay down, because when you take off and level off, you're on the approach to Green Bay. It's going to be a very quick trip.

We had an outstanding session over there. The committee members really participated, and we really appreciate all the help from everyone. I'd like to thank all of them personally for their input, and at this time we'd like to entertain any ideas or questions, comments that anyone has, and so we'll throw the floor open for those. Thank you.

DR. LAUBER: Thank you, Mike. I apologize for giving you this hot potato, because it is, as Mike said, one of the least well-defined and I think you've done a remarkably good job with it.

Are there comments and/or questions for Working Group V? Harry Orlady has one.

CAPT. ORLADY: Harry Orlady from Battelle. I think there's another way to use the airplane for LOFT training and even for resource mangement training that's probably the most cost effective of all because it doesn't cost anything. That is to aggressively support incident reporting, because if you think of it, the very act of reporting an incident requires -- well, first of all, the incident is something that people wouldn't want to happen. It's an unwanted occurrence. And the very act of reporting and analyzing it provides greater insight and awareness of that particular problem. It's highly specialized, it's individualized, it deals with exactly the problem that that particular crew had at the time. It certainly doesn't cover the whole spectrum of LOFT or resource management training. It has another interesting aspect, and one of the more subtle ones was the one that I think Hugh Drummond dealt with, and I've forgotten whether he used the term self-actualization or self-realization, but pilots feel better after reporting about the whole incident, and if they use the ASRS system, which I would highly recommend, of course, it has another advantage, a particular advantage if they get a call back with it, because they get a sympathetic rehash of their incident and some of the issues involved and invariably end up feeling better. It's not surprising at all and not unusual to have the men say as a result of this incident, I'm changing my procedure or I'm reevaluating things, and it doesn't cost you anything. But passive support of the program I don't think is approaching anywhere near its potential.

CAPT. SELE: The point is well taken. I think that I made the comment earlier, that we at our company require the pilots involved in any incident to write that incident to us. I have a whole mountain of these irregularity reports, as we call them, but if it's anything involving any area that I feel would be beneficial to anyone else, to the crew, to Air Wisconsin, to the rest of the aviation community, I highly encourage the individuals to submit those to ASRS. I think it is an excellent example, and I agree with your analogy there, if they write it down, they've had a chance to ventilate their feelings on the issue, and once in awhile that helps clear the air a great deal, and it is an excellent tool.

A VOICE: It came out very early in our talk yesterday all of us engage in LOFT, we just didn't know what it was. Most of the people in the room here have been through proving tests of one form or another, and at Simmons Airlines, we just went through a 121 with a Shorts 360. I know Suburban has gone through it recently and Air

Wisconsin. And if you look at the LOFT in the context of proving runs, on the airplane, what you're actually getting is a line-oriented flight test during the proving test, and all of the pilots in our company that participated in the proving runs received valuable LOFT training. However, as soon as that is over, our training reverts back to just passing that FAA check ride. And so that cause lost. Many of our pilots come along after the proving tests. So I think that is really what LOFT is all about, carrying the proving runs down the line to everybody else within the company, hopefully going through all the possible scenarios that go along. We all do it in the initial operating experience to a certain extent, however, with passengers on board the aircraft, you're very limited in what you can do with a crew. So we did discuss yesterday having to use the airplane for dedicated flights to operate real LOFT scenarios.

DR. LAUBER: Excellent comment. Okay. Thank you, again.

The last working group we'll hear from this morning, Working Group VI, also had a difficult topic area to deal with, in that we were opening up the whole question of innovative approaches to recurrent training programs. Hank Noon of Command Airways was the industry chairman of this, Miles Murphy was the NASA co-chairman.